it should be regarded as a Divine judgment, and the petition should be thrown overboard. A storm did arise, and the fierce waves broke over that devoted ship, whereupon a woman passenger demanded that the guilty "fox" be cast overboard. Accordingly, a paper which was supposed to be the petition was solemnly torn piecemeal and cast into the sea, the storm subsided, and the "fox" reached London safely.

Dr. Child and his associates failed completely in their mission. They went down along with the general defeat of Presbyterianism in England consequent upon the scheme of King Charles to unite the Royalists of England with the Presbyterians of Scotland, in an attempt to place him again on the throne; but "Pride's Purge" came along and settled all those questions with a vengeance.[8]

It must, in all candor, be admitted that Dr. Robert Child did not add any material strength or wisdom to the medical profession of his day, and he and his petition drop out of sight in London, and we hear of them no more. But he is entitled to the credit of antedating the patriots of the Revolution more than a hundred years in asserting the principle of *no taxation without representation*, and that is my apology, if any is needed, for attempting to resurrect and do justice to his memory.

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EUROPEAN MEDICINE: A RESUME OF MEDICAL PROGRESS DURING THE EIGHTEENTH AND NINETEENTH CENTURIES.

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THE medical historian of the future will designate the period covering the eighteenth and the nineteenth centuries as the history of "EUROPEAN MEDICINE." The period was a remarkable one, and the medical historian can discover, within the time, an array of eminent medical men comparing more than favorably with any other age or any other time.

In London, at the beginning of the eighteenth century, although there was neither university nor medical college, there were many great teachers and eminent practitioners in anatomy,

[8]Doyle (J. A.). The English Colonies in America. 1887. Vol. 2, p. 283.

surgery, and midwifery. Percival Pott was a surgeon to St. Bartholomew's Hospital, in the meridian of his fame as a humane and skilful operator and careful and watchful observer and writer. Dr. William Hunter was distinguished as an anatomist, physiologist, and accoucheur, and his contemporary, Smellie, was equally famed for his learning and his ungainliness of person. Denman, the pupil of Smellie, and John Hunter, the brother of William, were in connection with Dr. George Fordyce, Sir Joseph Banks, Dr. Solander, Dr. Muskleyne, Dr. Noothe, and many others, forming a society for the discussion of medical science. Percival Pott wrote a code of ethics in the year 1800. Dr. Macbride wrote his "Introduction to the Theory and Practice of Physic," Cleghorn gained a great reputation by means of his book on the "Epidemical Diseases in Minorca," and Rutty sent out his "Materia Medica."

During the same period of time, Paris contained many famous men in the medical walks of professional life. Antoine Louis was the learned expounder of difficult questions in legal medicine. His rival, Antoine Petit, celebrated for his surgical tact and sure diagnosis, had the additional merit of being the preceptor of Desault, who was an able and attractive, though not eloquent, lecturer in surgery. Sabatier wrote his anatomy, and also his work on surgery. Le Dran and Le Cat were two prominent surgeons and writers. Levret was an eminent teacher and writer on midwifery and wrote a work, "L'Art des Accouchemens." Lietaud wrote the well-known production on morbid anatomy, "Historia Anatomico-Medica." Lorry, a prolific writer on most of the branches of medicine, is chiefly remembered for his treatise on "Melancholy" and for his book on the diseases of the skin. Daran acquired a reputation of great surgical skill and talent, especially in healing stricture of the urethra by means of bougies.

The medical school at Montpellier possessed at this time Sauvages, so celebrated ever since for his "Pathologia Methodica" and "Nosologia Methodica," by which he gained the foremost rank as a nosologist. Venel, as the professor of materia medica, must be regarded as the first to introduce chemistry to its proper place in the faculty of the Montpellier medical college. He also prepared the way for the manufacture of artificial gaseous waters, by his analyses of many of the mineral waters of France. Fouquet wrote his remarkable treatise on the pulse in 1767, in which he attempted to show that each organ in disease had its character-

istic pulse, and that therapeutical agents, such as opium and blisters, have each their peculiar manifestations in this way. The reader will notice how similar this theory is to the ancient Chinese lore concerning the pulse.

Italy, the nursery of modern medicine, was an active contributor to its progress, through the able efforts of such great names as Morgagni, Spallanzani, Fontuna, Caldani, and Galvani.

In the north of Europe, the University of Upsala was now celebrated for its professors, among whom shone with peculiar lustre the names of Linnaeus and Bergman. The first is known as the great naturalist of the eighteenth century, and for his merits as a discoverer in chemistry, as, for instance, of oxalic acid; he systematized mineralogy, and analyzed mineral waters in a methodical and critical manner.

Gaubius, the successor of Boerhaave in the school of Leyden, then ranking as the first in Europe, issued (1750) his "Institutiones Pathologiae Medicinalis." Among his associates was Albinus the second, who as teacher of anatomy was almost without a peer in the history of medicine. Camper was another name of which Holland had reason to be proud.

The University of Göttingen, founded by George II, was rising rapidly to eminence under the presidency of Haller, whose name alone would have attracted students from all parts of Europe. Among his associates were Rudolph August Vogel, teaching materia medica, Roederer, who taught obstetrics, and the two Richters.

The same services that were rendered to the University of Göttingen by Haller, were performed by Van Swieten for the medical institutions of Austria, which, under the encouragement of the Empress Maria Theresa, were reorganized by him on a larger scale and a more liberal plan. Van Swieten is known as the learned, laborious, and patient commentator of Boerhaave; and this may connect his name with that of Gaubius and of Haller, who engaged in the same labor of love. He influenced DeHaën to come to Vienna, and encouraged him to found a clinical school of medicine, which, under the direction of Stoll, J. P. Frank, Hildenbrand, and others, has maintained its high character to the present day. Quarin was at this time the teacher of the institutes of medicine at Vienna. Greding was working for that eminence which he subsequently reached by his careful study and the appreciation of the best methods of treating the insane, and

by his numerous and carefully conducted observations to determine the organs affected in this class of sufferers. Theden, the favorite of the great Frederick, and who had accompanied that monarch in his wars, was at the time surgeon-general of the artillery, and was laying a foundation for Prussian surgery. The name of Zimmermann, whose work on dysentery was enough to keep his name forever on the pages of medical history, must not be omitted.

These celebrated men had much to do with making it possible to build the so-called modern medicine, for without their labors we might still be groping in the darkness of the Middle Ages. Their teachings may be said to have formed the characters of the men who not only formed the modern system of medicine but in a direct way founded the schools of the United States, of England, and of Germany, schools which may be considered to be the leaders of the modern medicine of the present day.

PHYSICAL DIAGNOSIS.

Leopold Auenbrugger, born in 1722, invented the art of percussion which, however, was not appreciated for many years after the death of the inventor. Auenbrugger applied his ear to the chest and noted the sounds that followed a smart blow of his right hand on the patient. His treatise (1761) on the subject attracted but little attention until it was translated by Corvisart, in 1808, when it quickly led the way to Laennec's improvement, whereby the ear is aided by the stethoscope. The great value of Auenbrugger's discovery, although unknown during his life, has long since been universally admitted, and has taken its proper place in medicine.

During Auenbrugger's time Wichmann, of Hannover, made a strong plea for more scientific diagnoses, and demonstrated how to make them. He also described the itch mite, which was at that time a most important discovery, on account of the almost universal prevalence of scabies at that time.

René Théophile Hyacinthe Laennec was born in Brittany, in 1781, and died there in 1826. He studied medicine in Paris, where he took the degree of doctor of medicine. In 1819 he made the discovery of mediate auscultation, or the use of the stethoscope. In 1819 he published his "De l'Ausculation Médiate," which has, undoubtedly, produced a greater effect, in so far as diagnosis is concerned, than any other single medical work that was ever published.

The discovery of ausculation by Laennec led to the resurrection of percussion as a method brought into existence by Auenbrugger, but which the publication in Latin, in 1761, of the "Inventum Novum" failed to keep alive, and which Corvisart, by his translation of Auenbrugger's treatise into the French language, with abundant commentaries, published in 1808, had vainly attempted to aid. Restored to life by Laennec, percussion has since been hand in hand with auscultation. Each of these two methods has given invaluable aid to the other. They cannot with propriety be disjoined in practice and they are necessarily associated in treating of the diagnosis of diseases. It would be of little use to discuss the relative advantages of the two methods. Doubtless had we to be deprived of one of them, we could better afford to lose percussion than auscultation, but the advantages of either would be greatly diminished by the loss of the other. Laennec made his discovery of auscultation by accident, but he would not have been likely to take advantage of the accident if he had not received his previous training at the hands of Corvisart, who it seems had made a special study of Auenbrugger's book and methods in the cause of percussion.

To Laennec, and later to Skoda, and still later to our own Austin Flint, who was probably the greatest of all in the subject of physical diagnosis, must be given the credit of establishing the art of physical diagnosis, in so far as the thoracic cavity is concerned. Skoda rather arrogantly criticised Laennec's work, but his investigations rather helped the subject than otherwise. To auscultation and to percussion were soon added inspection, palpation, mensuration, and succussion.

THEORIES OF MEDICINE.

In reviewing the theories, the so-called schools or systems of medicine, and the lives of those known as medical luminaries of the previous centuries, we learn the lesson, that in the so-called new systems of medicine old principles, for the most part, reappear, and that the labors of the past are rarely so deliberately consulted as to guard against the revamping of theories which have long since been proved futile. The remnants of the theories with which the history of medicine is paved are frequently dug up again to drag out another brief period of existence under a new name, unbeknownst to the new originator. It may be noted that the so-called new schools of medicine are not always new, but are more often a rehash of old, forgotten theories, which long since

have been rejected and thrown into the rubbish pile, from which they are resurrected by some ambitious person with a purpose.

MESMERISM.

Friedrich Anton Mesmer, born at Bodensee, 1734, and graduated in medicine at Vienna in the year 1766, was the founder of Mesmerism, or animal magnetism. His system, however, soon fell into disrepute because there was nothing in it worthy of the consideration of scientific men. The terms, animal magnetism, electro-biology, mesmerism, clairvoyance, odic force, and hypnotism have been used to designate a peculiar nervous condition in which the body and mind of the individual were supposed to be influenced by a mysterious force emanating from another person. The phenomena of animal magnetism were supposed to be due to some kind of magnetic force or influence peculiar to living beings and analogous to the action of the magnet upon steel or certain metals; electro-biology referred the phenomena to the action of the electrical currents generated within the body, and capable of influencing electrically the bodies of others; clairvoyance implied power of mental vision or mental bearing or of a mental production of other sensations, by which the individual became aware of events happening in another part of the world from where he was, or could tell of the existence of objects, which could not affect at the time any of his bodily senses; odic force was a term given to a force of a mysterious character, by which all the phenomena of animal magnetism might be accounted for; and hypnotism was a name applied to a condition artificially produced in which the person was apparently asleep and yet acted in obedience to the will of the operator as regards both motion and sensation.

HOMEOPATHY: HAHNEMANN.

Samuel Hahnemann, born at Meissen, 1755, studied medicine at Vienna under Dr. Quain, and commenced to practice in Saxony. His first work was a monograph upon arsenical poisoning which is yet highly esteemed in modern toxicology. In the year 1810, Hahnemann published his work entitled "Organon der Rationellen Heilkunde," which was translated into all the European languages. In this book he fully expounded his new system which he called homeopathy. His "Materia Medica" consisted of a description of the effects of medicine upon persons in health. He founded a school of medicine and was soon surrounded by dis-

ciples. As his system involved the administration of medicines, each separately by itself, and in doses infinitely minute, there was no longer any need of the separation between the apothecary and the physician, who in the same person could now very readily prescribe for the patient.

Probably at the end of the eighteenth century and the beginning of the nineteenth, it was the practice to bleed the patient not with reason so much as with custom, and it was also the usage to give enormous doses of the vilest drugs. For example, it was not uncommon to give thirty grains of calomel at a single dose, or sixty grains of gamboge and two or three ounces of saltpeter during the day. Is it any wonder that there arose a system such as the homeopathic, although it went to the other extreme and made it the rule to give an absurdly small dose? It was surely a jump from the one extreme to the other.

Hahnemann, the founder of homeopathy, denied the existence of disease, admitting only symptoms. His motto, "Similia similibus curantur," was not original with him as it had long before been formulated by Hippocrates, and had been used with much success by the great humbug Paracelsus. Hahnemann professed to base the science of medicine entirely on a knowledge of symptoms, regarding all the investigations of the causes of symptoms as useless. While thus rejecting all the lessons of morbid anatomy and pathology, he put forward views respecting the causes of disease which hardly need to be seriously stated. and certainly do not merit our serious attention in the light of the modern progress of scientific medicine.

Whilst the followers of Hahnemann contributed nothing of any weight to the science of medicine, it must be admitted that they did much good in the way of treating the sick in the sick-room. Their best endeavor was towards hygiene, diet, and regulation of the manner of living, showing that the patient often recovered without medicine better than when the patient was drugged with shot-gun prescriptions. But in this they followed the wise teachings of Hippocrates, the father; not of homeopathy, but of medicine as we understand it to-day.

ISOPATHY.

Isopathy is an offshoot of homeopathy, and is probably the filthiest theory ever originated by the mind of man. According to it, like is cured by like; to such an extent was this theory

carried that smallpox was treated by variolous pus, tapeworm by the ingestion of the proglottides, etc.

THE ELECTRO-HOMEOPATHIC SYSTEM.

The electro-homeopathic system is an invention of Count Mattei who prates of "red," "blue," and "green" electricity, a theory that, in spite of its utter idiocy, has attracted a considerable following and earned a large fortune for its chief promoter.

A MISTAKEN THEORY.

Roeschlaub, born in 1768, endeavored to mold into one the Brunonian errors and the fancies of Solidism. He held that life depends on irritability, but is inherent in the organism as an independent feature; so he recognized both irritability and solidism, whilst Brown considered the former alone, adding as an afterthought, a chemical or qualitative potency (oxygen) in order to account for alterations of quality. Roeschlaub inclined first toward natural philosophy, and then to mysticism and theosophy; finally, with a courage almost unexampled, he upset all his former teachings by admitting that he was mistaken.

Sir John Forbes, born in England, 1787, became renowned for the introduction of physical diagnosis and the stethoscope into England, and for his remarkable success as an editor of medical journals, and a "Cyclopedia of Practical Medicine," in four volumes, published in 1835. This latter work exercised a pronounced and decidedly beneficial influence on the theory and practice of medicine. Whilst Forbes was not the author of any new system, nor the discoverer of any new principle, he was such a careful compiler of what was then known in medicine that his influence on medical progress was very great.

VETERINARY SCIENCE.

Claude Bourgelat, born at Lyons, 1712, was the first to establish a veterinary college in his native land. He wrote many books to further the knowledge of his chosen speciality. Bourgelat wrote on materia medica, and diseases of cattle and horses, and also on farriery. Veterinary medicine, as a scientific art, takes date from 1761, when the first veterinary college was established at Lyons with royal patronage, under the able teachings of Bourgelat.

Thomas Beddoes, born in England, 1754, was a noted medical writer and teacher, and is now principally remembered for his

writings on medicated airs, a subject which is now receiving renewed and increased attention.

David Abercromby, who lived in England, where he also received his medical education, wrote the following medical works, which had great influence over the medical minds of his day and generation: "Nova Medicinæ Clavis," "De Variatione Pulsus," and "Opuscula Medica."

John Abercrombie, born in 1781, a noted Englishman, took his degree in medicine at Edinburgh. His works, "On the Intellectual Powers" and the "Philosophy of the Moral Feeling," had for an object the illustration of the "important relation which subsists between the science of mind and the doctrines revealed by religion." Being recognized as the first consulting physician in Scotland, Abercrombie did much towards molding the characters of the succeeding generation of physicians.

Francis Home first described croup in 1765, and is kindly remembered for this by the medical fraternity.

James Currie, born in Scotland, 1756, is chiefly known on account of his great work, "Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Febrile Diseases."

SURGERY.

Desault, one of the most prominent surgeons of the eighteenth century, instituted a clinical school for surgery at the Hôtel-Dieu in Paris, and attracted pupils from all the countries of the civilized world, often having audiences of six hundred students and physicians. Most of the surgeons of the period derived their knowledge of clinical and operative surgery in greater part from the lectures delivered by Desault and from the surgical clinics presented by him. Desault introduced many improvements in the practice and in the armamentarium of the surgical art. He was also the champion of healing by first intention. Through his efforts surgery, as then known, was systematized and made more practical. Pierre Joseph Desault was born in the year 1744, and he died in the year 1795. His life was a valuable one to the medical world, both as a surgeon and as an anatomist.

François Chopart, born in 1743, was a friend and contemporary of Desault, and will be remembered for the amputation that bears his name, as he was the originator of the operation. Another surgeon of renown, living at this time was *Richter,* of Germany, who enunciated the principle of dressing wounds

"quickly, easily, and rarely." Up to this time it had been the habit of surgeons to meddle entirely too much with wounds that were healing by granulation, and thus oftentimes retarded the healing instead of giving any benefit to the patient.

Jean Louis Petit, born in 1674, perfected the screw tourniquet, and also otherwise improved the art of amputation, by originating the first decided improvement upon the ancient method of circular incision. With the circular incision he divided the skin and subcutaneous cellular tissue alone, and after reflecting them in the form of a cuff, he divided the muscles on a higher plane or level by a second circular sweep of his concave knife. After this, various methods of making the flaps in amputations were devised by different surgeons, and several such operations bear the names of the surgeons who devised them.

POTT'S DISEASE.

Percival Pott was born in London in 1713, and became a distinguished surgeon. We are indebted to him for his investigations on the subject of angular curvature of the spine, the consequence of disease of the bones of the spinal column, on which account the affection is known as Pott's disease. It is a disease of the spinal column characterized by a caries of the vertebral bodies with the attendant changes. The disease is probably as old as humanity, and the characteristic deformity is mentioned by ancient writers. A specimen in the Peabody Museum shows that the disease was not unknown among the prehistoric tribes of the North American Indians. The disorder was first accurately described by Percival Pott, in 1779. The tuberculous nature of caries of the spinal bones is at present accepted by the pathologists.

Sir Charles Bell was an eminent surgeon, whose discoveries in the branch of the nervous system have given him a European fame. He was born in 1774, and while a mere youth assisted his brother John, who was also a prominent physician and medical teacher, in his anatomical lectures and demonstrations. The two brothers conceived the idea of teaching anatomy and practical surgery in their applications to each other. This is called *topographical anatomy,* a science which is now taught in every good school of medicine.

Antonio Scarpa, born in Italy, in 1747, after studying medicine in Italy, France, Holland, and England, became a celebrated

anatomist. He was noted for being one of the greatest clinical surgeons in Europe. Scarpa's merits as an observer, a teacher, and an author are very great, and in all his work he was industrious, scholarly and artistic. He published treatises on the anatomy of the organs of smell and hearing, on the nerves of the heart, and on the minute anatomy of the bone. It was through his efforts that the question of the heart being supplied with nerves was settled. Scarpa's triangle, an anatomical and surgical part of the thigh, is well known to every surgeon, and is one of the beauties of topographical anatomy.

Lazzaro Spallanzani, born in Italy, 1729, established the fact that the heart has a propulsive power over the blood in the various vessels, demonstrated that the heart never wholly empties itself, and explained the various causes which retard the circulation and the obstacles produced by the weight of the blood. He became best known to medical history through his efficient studies in natural history.

Marie François Xavier Bichat, one of the most famous anatomists and physiologists, whose discoveries mark an epoch in biology, was born in 1771. He was one of the most capable physicians of his time and the author of nine important volumes, each one of which would have brought him fame, besides being engaged as a teacher and practitioner of medicine. His treatise on membranes, and his work on general and pathological anatomy laid their impress on the study of medicine from his time on. Bichat may be considered the founder of general anatomy. General anatomy, as we understand it to-day, was formerly not known to science, and Bichat was the first to simplify anatomy and physiology by reducing the complex structures of the organs to the simple or elementary tissues that enter into them in common. Thus he established cellular, osseous, fibrous and other tissues as such, wherever they appear throughout the body. He described the stomach as composed of mucous, serous, and muscular layers.

By overthrowing the speculative tendency of medicine, and by placing facts in the front rank, Bichat did good work for the progression of the medical sciences, and, therefore, he has been appropriately named the "Napoleon of Medicine." He also developed another luminous idea—the distinction between the organic and the animal life.

Bichat died at the early age of 31 years, falling a victim to intense and unremitting labor. The following two of his most

famous remarks are well worthy of your attention: "Take away some fevers and nervous troubles, and all else falls to the kingdom of pathological anatomy"; and, "You may observe disease of the heart, of the lungs, abdominal viscera, etc., night and morning by the sick-bed for twenty years, yet the whole furnishes merely a jumble of phenomena which unite nothing complete; but if you open a few bodies, you will see the obscurity give way, a result never accomplished by observation if we do not know the seat of the disease."

Pathologists imitating Bichat, endeavored to reconstruct their science upon an anatomical basis. France was the land, of all others, in which the men of that age sought and found in pathological anatomy a solid foundation for medical knowledge. Such men were, among others, Bayle, Corvisart, Laennec, Dupuytren, Broussais, Cruveilhier, Lallemand, Andral, Louis, Gendrin, Bouillaud, and Rayer.

Surgery, without pathological anatomy, would be reduced to a mere mechanical art, aided by certain empirical practices, alike unsatisfactory to the surgeon and of doubtful benefit to the patient—such was surgery during the "Dark Ages of Medicine." Without pathological anatomy medicine must fall back on its speculative theories and systems of medicine.

EDWARD JENNER AND VACCINATION.

One of the most notable events in the history of medicine was the introduction of vaccination for the making of the person immune against smallpox, and with the aid of the immunization of the people against the dread disease, rid the world of smallpox. This honor must be accorded to Edward Jenner, an English surgeon, who was born at Berkeley, in Gloucestershire, on May 17, 1749, and was the third son of the Rev. Stephen Jenner. After receiving his preliminary education, Jenner prosecuted his professional studies under John Hunter, becoming an expert anatomist, a sound pathologist, a careful experimenter, and a good naturalist.

The preventive inoculation against smallpox was practised both with the virus taken from those suffering from the disease of smallpox and with the virus taken from the cowpox for a long time before Jenner, but to the latter must be given the credit of making of the subject careful observation and study. Jenner first observed that people who acquired cowpox by milking cows

affected with that disease also acquired immunity from smallpox. From the time of his first observation, in 1768, to the date of his announcement of the result of his researches to the world, a period of thirty years elapsed, during which time he had patiently and carefully investigated the subject, both by observation and experiment. If ever a discovery was announced to the world with due deliberation it was that of vaccination. We have evidence that for at least thirty years, during which he encountered many perplexing and discouraging obstacles, and which he overcame one by one, Jenner studied the subject before he published it to the world, under the title of "An Inquiry into the Causes and Effects of the Variolæ Vaccinæ, a Disease discovered in some of the Western Countries of England, particularly Gloucestershire, and known by the name of Smallpox."

Jenner made his first vaccination upon the human subject in 1796, and a few years later the practice was introduced into Germany, France, and the United States. The practical usefulness of this great discovery lies in the possibility of transmitting vaccinia from the cow to the human individual and of making him immune to the disease. The disease known as smallpox is said to have existed in China many centuries before Christ, and the *Pesta Magna* described by Galen is believed to have been smallpox. During the crusades it became widespread. It was brought to America in the sixteenth century.

CHEMISTRY.

Karl Wilhelm Scheele, born in Sweden, 1742, after receiving a brief and very incomplete preliminary education, was apprenticed to an apothecary at Gothenburg, where he laid the foundation of his knowledge of chemistry. The chief of his chemical discoveries were: tartaric acid (1770), chlorine (1774), baryta (1774), oxygen (1777), and glycerine (1784); some of which had been previously discovered, though Scheele was not aware of it. He also discovered the arsenite of copper, now known as Scheele's mineral green, and prussic acid, one of the deadliest poisons known to chemistry, used, however, in therapeutics in a diluted form.

Leopold Gmelin, born at Göttingen, 1788, died in 1853, did great service to science in that he collected and arranged in order all the facts that had been discovered in chemistry. His "Handbuch der Chemie" stands alone. Other writers have indeed ar-

ranged large quantities of material in systematic order, but for completeness and fidelity of collation, and consecutiveness of arrangement, Gmelin's "Handbook" is unrivalled, and on account of its great value it is considered a classic in the literature of chemistry.

René Joachim Henri Dutrochet, born in France, 1776, became an eminent physiologist and physician. He is best known through his researches on the passage of fluids through animal and vegetable substances. The passage of a fluid from without inwards, he called endosmosis, and from within outwards, exosmosis; terms which have been adopted by physiologists of the present day.

Baron Dominique Jean Larrey, born in France, 1766, was a noted surgeon and professor of surgery, who also acted in various capacities in the medical department of Napoleon's armies and campaigns. Apart from his skill, talent, courage, and humanity shown in the course of his practice, Larrey has a high scientific reputation, and is the author of a number of very valuable books on various subjects connected with his profession, most of which have been translated into other languages. Larrey's works have been considered by eminent authorities to be the connecting link between the surgery of the last age and that of the present day. Larrey is also the inventor of the *ambulance volante* for the convenience of transporting the wounded from the field of battle to some place of safety to receive the proper surgical care.

ENGLISH SCHOOL OF MEDICINE.

At the beginning of the nineteenth century the medical practitioners of England were divided into three classes, physicians, surgeons, and apothecaries. The practice of medicine, as we understand it now, was still in its infancy. Though there were many men in medical practice who had received a technical education, and had been examined before admission to practice, there was a host of empirics who practiced without diplomas, such as cuppers, leechers, old women, midwives, herb-doctors, the majority of whom did a thriving business. And, though the practice of medicine is as yet by no means what it ought to be, times have changed decidedly for the better, mainly through the labors of the medical men whose lives we are now briefly to review.

Joseph Black was born of Scottish parents at Bordeaux, 1728. After removing to Scotland, he gained fame as an eminent chemist and was appointed as a lecturer at the University of Glasgow,

where he labored with zeal and great success. He is principally known to science for his theory of "latent heat" on which theory he is still considered an authority.

William Cheselden (1688-1752), one of the most famous of the English surgeons and anatomists of the eighteenth century, wrote a work on the "Anatomy of the Human Body," in 1713, which was for a long time the leading text-book in England on the subject. He also wrote a valuable book on "Osteography," which was published in 1733.

Alexander Blackwell, born at Aberdeen in the year 1708, studied under Boerhaave at Leyden, and became famous as a writer on materia medica. His work in two volumes, published 1737-1739 and entitled "A Curious Herbal," which contained over five hundred cuts of medicinal plants, was long appreciated by the medical fraternity as a leading book on materia medica.

CHEMICAL AGENCIES OF ELECTRICITY.

Sir Humphry Davy, born in 1778, was probably one of the greatest chemists of any age. In 1806, he delivered a course of lectures "On Some Chemical Agencies of Electricity" which was universally considered one of the most valuable contributions ever made to chemical science. Following out this principle, he was led to the grand discovery that the alkalies and the earth are compound substances, formed by oxygen united with metallic bases. It was the substance potash he first succeeded in decomposing; and when he saw the globules of the new metal, potassium, he became overjoyed. He also discovered the new metals sodium, barium, strontium, calcium, and magnesium by decomposing soda, baryta, strontium, lime, and magnesia.

Matthew Baillie, born in Scotland, 1761, was a distinguished physician of his time. Baillie's fame rests on his book, "The Morbid Anatomy of Some of the Most Important Parts of the Human Body," which, by exciting in a great measure a spirit of careful induction among professional men, marked an era in the science of medicine.

John Abernethy, born at London, 1764, was an eminent English surgeon, and the most popular medical teacher of his day. In 1814, he was appointed professor of surgery and anatomy to the College of Surgeons, where he lectured and worked most successfully for a long time. A sketch of his life was recently published in the JOURNAL.*

*1904, ii, pp. 113-119.

Sir Astley Cooper, the celebrated English surgeon and medical scientist, was born in the year 1768. Perhaps his most important work was on "Hernia," in which he graphically described both the anatomy of the disease and the mode of operating for its relief, which was a great contribution to medical science, since hernia was but ill-understood before the work of Cooper's appeared in literature. Cooper also attempted to tie the carotid artery, and in 1817 he also attempted to tie the aorta. Cooper did more than any other English surgeon, except perhaps Lister, to elevate surgery to the position of a science. Before his time, surgical operations were described as a series of "frightful alterations, or hazardous compromises," but by the teachings and example of Cooper, surgery attained a more dignified position.

Sir William Lawrence, born in England, 1783, became noted as a lecturer on anatomy and surgery, and as a surgeon. He died in 1876. His writings were very numerous.

Anesthesia was produced in the year 1784, by *Dr. Moore,* of London, who used compression of the nerves of a limb requiring amputation, but this method was in itself productive of much pain. In 1808 Sir Humphry Davy suggested nitrous oxide gas, or the so-called "laughing gas," as an anesthetic, and as early as 1795 Dr. Pearson used the vapor of sulphuric ether for the relief of spasmodic affections of the respiratory passages. Sir James Y. Simpson described the anesthetic virtues of chloroform in 1849.

Sir Benjamin Collins Brodie, born in 1783, was a distinguished surgeon, and much liked as a lecturer on nervous diseases, as well as on pathology. His works on nervous diseases, and on the diseases of the bones and joints, were important contributions to medical literature.

Richard Bright, born at Bristol in 1789, was a noted English physician, educated at Edinburgh. His speciality was morbid anatomy of the internal organs. He discovered that an albuminous condition of the urine, accompanied with dropsical effusions, was dependent on a peculiar degenerative condition of the kidneys, whence the diseases of the kidney in which these conditions occur was called Bright's disease.

Marshall Hall, was born in England, 1790, graduated in medicine at Edinburgh in 1812, and afterwards studied for three years in the various schools of the Continent. His name is best known in connection with the doctrine of the reflex function of the

nervous system. He admitted that the phenomena had long been known to physiologists, but he believed himself to have been the first to show their independence of sensation, to bring them together under one generalization, to establish with precision the laws of their production, to assign them their just rank in physiology, and to apply the doctrine to the elucidation of disease. Marshall Hall's last bequest to the science of medicine and the cause of humanity was the description of a simple and easily applied method of restoring suspended respiration, which has been the means of saving many from untimely death, and is known to science as the Marshall Hall method. Hall's method of artificial respiration is unsatisfactory, because it is incomplete. Under any circumstances it is far inferior to Sylvester's method, Howard's method, or the Michigan method; nevertheless, Hall's method is held in high esteem by the medical profession, if for no other reason than for giving rise to a *method* that could be improved.

William Farr, born in England, 1807, devoted himself mainly to a consideration of the important questions resulting from medical statistics. His article "Vital Statistics," published in 1837, obtained notice and approval, not only from medical men, but also from statesmen and scientists. In the same year of the publication of his notable article, the registration of all the deaths, and of the causes of death, was commenced in England, thanks to the labors of Farr.

James Cowles Prichard, born at Ross, 1785, took his medical degree at Edinburgh, 1808. Dr. Prichard's fame as the greatest of ethnologists, which, during his lifetime was miserably acknowledged, remains undisturbed to this day. He was the first to raise ethnology to the rank of a science, and his work, "Researches into the Physical History of Mankind," is a noble monument of his genius, skill, and perseverance.

Sir James Paget, born in England, 1814, was especially noted for his lectures on surgical pathology, through which he greatly enriched the science of surgery. He published a work on surgical pathology that is still considered an authoritative treatise.

Jonathan Pereira, born in London in 1804, was an eminent pharmacologist. His work, "Elements of Materia Medica," published in 1840, is remarkable for the extent of its researches, the variety of its information, whether scientific, commercial, or practical, and the scrupulous exactness of its statements. In 1843, Pereira published an excellent treatise on dietetics.

Sir James Young Simpson, born in Scotland, 1811, graduated as a doctor in medicine in 1832, and introduced to the scientific world the use of chloroform as an anesthetic, and the stoppage of hemorrhage by acupressure. He was especially efficient as a teacher and writer of the science of obstetrics.

William Benjamin Carpenter, born in England, and graduated in medicine in 1839, was the most distinguished physiologist of the time in which he lived, and his books on physiology and microscopy gained wide prestige.

Dr. Alexander Wood, of Edinburgh, born 1817, was the first to use and to recommend the use of the hypodermic syringe for the application of morphine for hypodermic use. No scientific doctor of the present day would be willing to relinquish this highly useful mode of dispensing morphine in neuralgias, in cholera morbus, in cardiac dyspnea, and in the various gastric hepatic, uterine, ovarian and kidney colics.

Space only forbids of our more extended mention of John Goodsir and his anatomical observations; of Robert Liston and John Mason Goode; of Francis Ramsbotham, the obstetrican, and Benjamin Travers and his "constitutional irritation"; of John Cheyne and William Stokes; and of a host of others who formed that brilliant galaxy of English physicians and surgeons of the last two centuries.

[*To be concluded.*]

POPE JOHN XXII AND THE SUPPOSED BULL FORBIDDING CHEMISTRY.

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IN the last number of the JOURNAL[1] there is an address bearing the title "Some Relations of the Church and Scientific Progress," by Wm. J. Cruikshank, M.D., of Brooklyn. In the course of the article he has much to say with regard to the deterrent influence of religion upon the development of science before the Reformation. The address contains a number of historical inaccuracies. Attention is here called to a notable one in the matter of chemistry. That science, according to Dr. Cruikshank, is supposed to have come under the

[1]July, 1905, iii, pp. 184-188.